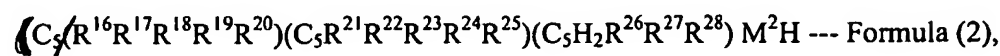


This listing of claims will replace all prior versions, and listings, of claims in the application:

IN THE CLAIMS:

1. (Cancelled)

2. (Currently Amended): ~~A~~ The transition metal compound represented by the following general formula (2) ~~as claimed in Claim 1:~~



wherein $\text{C}_5\text{R}^{16}\text{R}^{17}\text{R}^{18}\text{R}^{19}\text{R}^{20}$, $\text{C}_5\text{R}^{21}\text{R}^{22}\text{R}^{23}\text{R}^{24}\text{R}^{25}$ and $\text{C}_5\text{H}_2\text{R}^{26}\text{R}^{27}\text{R}^{28}$ denote

5 cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively;

R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} , R^{23} , R^{24} , R^{25} , R^{26} , R^{27} and R^{28} are any one of hydrogen atom, a hydrocarbon group ~~groups~~ each having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different ~~from one another~~;

10 among them, R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , or R^{21} , R^{22} , R^{23} , R^{24} , R^{25} , or R^{26} , R^{27} , R^{28} can be bonded to one another forming a cyclic hydrocarbon group, ~~including a~~ polycyclic structure);

~~Provided~~ provided that at least one of R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} , R^{23} , R^{24} , R^{25} , R^{26} , R^{27} and R^{28} is a substituent ~~group~~ other than hydrogen atom; and

M^2 denotes a transition metal of group 4 of the periodic table.

3. (Original): The transition metal compound as claimed in Claim 2, wherein R^{26} , R^{27} and R^{28} are bonded to adjacent carbons at the 1-position, 2-position and 3-position.

4. (Currently Amended): The transition metal compound represented by the following general formula (3) as claimed in Claim [[1]] 2;



wherein $(C_5H_2R^{29}R^{30}R^{31})$, $(C_5H_2R^{32}R^{33}R^{34})$ and $(C_5H_2R^{35}R^{36}R^{37})$ denote

cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively;

R^{29} , R^{30} , R^{31} , R^{32} , R^{33} , R^{34} , R^{35} , R^{36} and R^{37} are any one of hydrogen atom, a hydrocarbon ~~groups each group~~ having 1 to 30 carbon atoms or an organosilicon ~~groups~~ group having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different ~~from one another~~,

among them, R^{29} , R^{30} , R^{31} , or R^{32} , R^{33} , R^{34} , or R^{35} , R^{36} , R^{37} can be bonded to one another forming a cyclic hydrocarbon group ~~(including a polycyclic structure)~~;

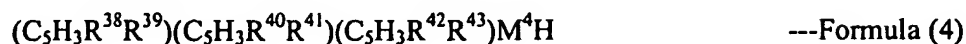
provided that at least one of R^{29} , R^{30} , R^{31} , R^{32} , R^{33} , R^{34} , R^{35} , R^{36} and R^{37} is a substituent ~~group~~ other than hydrogen atom; and

M^3 denotes a transition metal of group 4 of the periodic table.

5. (Currently Amended): The transition metal compound as claimed in Claim 4, wherein R^{29} , R^{30} , R^{31} ~~[[;]]~~, or R^{32} , R^{33} , R^{34} , or R^{35} , R^{36} , R^{37} are bonded to adjacent carbon atoms at the 1-position, 2-position and 3-position of the respective cyclopentadienyl group.

6. (Currently Amended): The transition metal compound as claimed in Claim 5, wherein the three substituted ~~cyclopentadienyl~~ cyclopentadienyl groups of $(C_5H_2R^{29}R^{30}R^{31})$, $(C_5H_2R^{32}R^{33}R^{34})$ and $(C_5H_2R^{35}R^{36}R^{37})$ are have the same ~~in~~ structure.

7. (Currently Amended): The transition metal compound represented by the following general formula (4) as claimed in Claim [[1]] 2:



wherein $(C_5H_3R^{38}R^{39})$, $(C_5H_3R^{40}R^{41})$ and $(C_5H_3R^{42}R^{43})$ denote cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively: 5

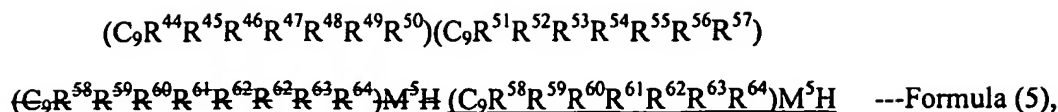
R^{38} , R^{39} , R^{40} , R^{41} , R^{42} and R^{43} are any one of hydrogen atom, a hydrocarbon groups each group having 1 to 30 carbon atoms or an organosilicon groups each group having a substituent of a hydrocarbon having 1 to 30 atoms, which are the same or different from one another;

among them, R^{38} , R^{39} , or R^{40} , R^{41} , or R^{42} , R^{43} can be bonded to one another 10 forming a cyclic hydrocarbon group, (including a polycyclic structure);

provided that at least one of R^{38} , R^{39} , R^{40} , R^{41} , R^{42} and R^{43} is a substituent group other than hydrogen atom; and M^4 denotes a transition metal of group 4 of the periodic table.

8. (Currently Amended): The transition metal compound as claimed in Claim 7, wherein the three substituted cyclopentadienyl cyclopentadienyl groups of $(C_5H_3R^{38}R^{39})$, $(C_5H_3R^{40}R^{41})$ and $(C_5H_3R^{42}R^{43})$ have are the same in structures structure.

9. (Currently Amended): The transition metal compound represented by the following general formula (5) as claimed in Claim [[1]] 2;



wherein $(C_9R^{44}R^{45}R^{46}R^{47}R^{48}R^{49}R^{50})$, $(C_9R^{51}R^{52}R^{53}R^{54}R^{55}R^{56}R^{57})$ and $(C_9R^{58}R^{59}R^{60}R^{61}R^{62}R^{63}R^{64})$ denote indenyl groups or substituted indenyl groups, respectively;

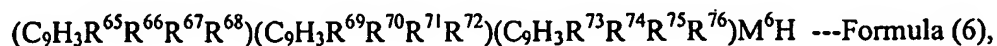
R^{44} to R^{64} are any one of hydrogen atom, a hydrocarbon groups each group having 1 to 30 carbon atoms or an organosilicon groups each group having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different from one another,

among them R^{44} to R^{50} or R^{51} to R^{57} or R^{58} to R^{64} can be bonded to one another forming a cyclic hydrocarbon group (including a polycyclic structure);

provided that at least one of R^{38} , R^{39} , R^{40} , R^{41} , R^{42} and R^{43} is a substituent other than hydrogen atom; and

M^5 denotes a transition metal of group 4 of the period table.

10. (Currently Amended): The transition metal compound represented by the following general formula (6) as claimed in Claim [[1]] 2:



wherein $(C_9H_3R^{65}R^{66}R^{67}R^{68})$, $(C_9H_3R^{69}R^{70}R^{71}R^{72})$ and $(C_9H_3R^{73}R^{74}R^{75}R^{76})$ denote indenyl groups or substituted indenyl groups, respectively;

R^{65} to R^{76} are any one of hydrogen atom, a hydrocarbon groups each group having 1 to 30 carbon atoms or an organosilicon groups each group having a substituent

of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different from one another;

among them, R^{65} to R^{68} , R^{69} to R^{72} and R^{73} to R^{76} ^{are} ~~can be~~ bonded to carbon atoms at the ~~of~~ 4-position, 5-position, 6-position and 7-position, respectively, of the indenyl groups ~~(in the part of the six-membered ring)~~ and they can be bonded to one another 5 forming cyclic hydrocarbon groups, ~~(including a polycyclic structure);~~ and

M^6 denotes a transition metal of group 4 of the periodic table.

11. (Currently Amended): The transition metal compound as claimed in Claim 10, wherein the three substituted indenyl groups of $(C_9H_3R^{65}R^{66}R^{67}R^{68})$, $(C_9H_3R^{69}R^{70}R^{71}R^{72})$ and $(C_9H_3R^{73}R^{74}R^{75}R^{76})$ have ~~are~~ the same in structure.

12. (Currently Amended): The transition metal compound as claimed in Claim [[1]] 2, wherein the transition metal of group 4 of the period table is Zr.

13. (Currently Amended): A catalyst for olefin polymerization, which comprises the transition metal ~~compounds~~ compound as claimed in Claim [[1]] 2, an organoaluminum oxy compound and/or a compound ^{that} ~~which can~~ ₅ form ion pairs with the transition metal compound.

14. (Original): The catalyst for olefin polymerization as claimed in Claim 13, wherein the organoaluminum oxy compound is methyl aluminoxane.

15. (Previously Presented): A solid catalyst for olefin polymerization, wherein the catalyst as claimed in Claim 13 is supported on a carrier.

16. (Currently Amended): A solid catalyst for olefin polymerization, wherein the transition metal compounds compound as claimed in Claim [[1]] 2 is supported on a layered silicate.

17. (Currently Amended): A method for producing a polyolefin, wherein an olefin is polymerized in the presence ~~under the existence~~ of the catalyst as claimed in Claim 13.

18. (Currently Amended): The method for producing a polyolefin as claimed in Claim 17, wherein the olefin polymerization is homopolymerization of ethylene or copolymerization of ethylene and an α -olefin.